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Air Operating Permit Excess Emissions Report Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	April 2, 2010	Incident type: breakdown/ upset/startup or shutdown	Startup
Start Date	April 2, 2010	Start Time:	1:00 PM
End Date	April 2, 2010	End Time:	7:00 PM
Process unit or system(s): HTU2			

Incident Description

On April 2 at approximately 1:10 PM a high windstorm caused a severe power system disturbance on the PSE's system that tripped several units in the refinery including the HTU2 unit. The HTU2 unit was restarted at around 7 PM that night. During startup a high NOx reading of 7.6 lbs/hr per day occurred, which is above the limit of 7.5 lbs NOx/hr per day. This particular NOx calculation uses a fixed NOx emissions factor of 0.114 lbs NOx/mmbtu (per AP42), the metered fuel gas flow rate, and the BTU/CF value from the online analyzer. During startup a high fuel gas flow and an elevated BTU/CF value due to the startup conditions, both of which are normal during startups, resulted in a NOx calculation above the limit. PSR does not believe the actual NOx value exceeded the limit because NOx readings taken from the stack using a portable NOx monitor shows a NOx emission factor of about 0.077 lbs NOx/mmbtu. This would show a NOx value of 5.2 lbs/hr per day, which is below the limit.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

The HTU2 was started up following written startup procedures.

Applicable air operating permit
term(s): 5.7.5

Estimated Excess Emissions: Based on fuel flow meter, online heat content, and AP42 NOx EF.	Pollutant(s): NOx	Pounds (Estimate): 2 lbs
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The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☐ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

- ☒ No
- ☐ Yes (provide details below)

PSR0000498

Root and other contributing causes of incident:

A severe power system disturbance on the PSE's system caused by a windstorm tripped the HTU2. In addition, the computer system that alerts high environmental readings was not functioning, which means operators did not get an indication that the NOx was high.

The root cause of the incident was:

(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

- ☒ Identified for the first time
☐ Identified as a recurrence (explain previous incident(s) below – provide dates)

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

- ☐ No
☒ Yes (describe below)

A severe power system disturbance on the PSE's system caused by a windstorm tripped the HTU2.

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2

Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

Operations will change the startup procedure to limit the heater firing rates during startup.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing?

☒ No ☐ Yes

Is the source requesting additional time for completion of the report? ☒ No ☐ Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: _ Tim Figgie _ Date: _ May 25, 2010 _

Responsible Official or Designee: Jim G/Kremer

Date: 5/27/10